

Small Intestinal Stricture Complicating an Asymptomatic Superior Mesenteric Vein Thrombosis

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Abstract Ischemic stricture of the small intestine is a rare complication of mesenteric vein thrombosis. We report a case of small intestine stricture that complicated an asymptomatic superior mesenteric vein thrombosis. This diagnosis was challenging owing to the silent course of the primary cause; the superior mesenteric vein thrombosis and the rarity of the ischemic stricture of the small intestine as a complication. The patient underwent resection-anastomosis and passed an uneventful postoperative course. We concluded that a high suspicion level should be maintained during dealing with the cases of intestinal obstruction due to small intestine stricture as mesenteric ischemia could be the underlying cause.

Keywords: *small intestine obstruction, superior mesenteric vein, ischemic stricture, venous thrombosis*

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1. Introduction

The small intestine stricture is not a common complication of Mesenteric vein thrombosis (MVT). This is suggested by the fact that it is hardly mentioned in the reports of MVT [1]. However, the causality relationship between MVT and stricture of the small intestine is demonstrated by both experimental and clinical evidences. An intestinal stricture was noticed in the vicinity of the embolized branch blood supply in an experimental study that investigated the effects of embolization of a main branch of the superior mesenteric artery in dogs, [2]. Also a lot of case reports suggest that small intestinal strictures occurred on top of MVT [1,3,4,5].

2. Case Report

A 47 years old male patient was admitted to our hospital complaining of recurrent attacks of vomiting for 3 months. His condition started with a gradual onset of vomiting associated with epigastric pain, anorexia and weight loss. He was treated by his primary health care provider using anti-emetics and proton pump inhibitor as he was diagnosed to have gastritis based solely on his clinical picture. Despite the medical treatment, his condition progressed to persistent vomiting. His past history showed no relevant medical conditions, he did not undergo any surgical procedures and did not have any similar complaint before. Clinical examination revealed epigastric tenderness, normal intestinal sounds with no other signs of intestinal obstruction.

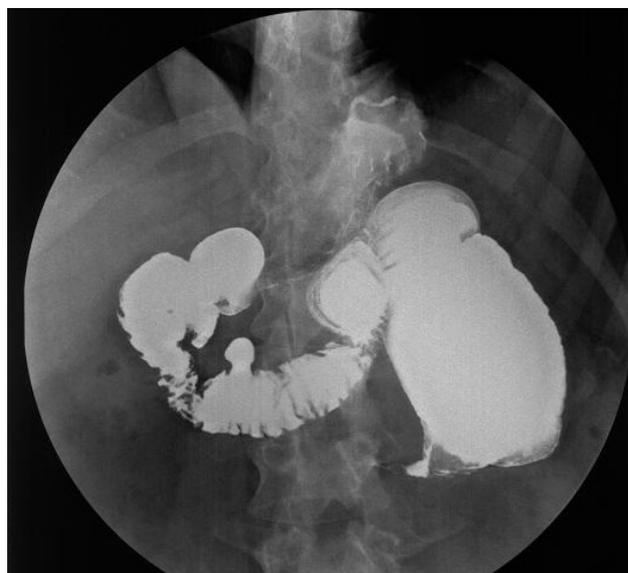


Figure 1. Barium follow through revealing a large diverticulum in the second part of the duodenum and a markedly dilated proximal jejunum with abrupt termination at a persistent tight stricture

Upper GIT endoscopy showed a dilated stomach filled with secretions, as well as diffuse gastritis. The duodenum also was full of secretion and altered blood with severe duodenitis. A barium follow-through showed a large diverticulum in the second part of the duodenum and a markedly dilated proximal jejunum with abrupt termination at a persistent tight stricture (Figure 1). To rule out the possibility of malignant growth a CT scan of the abdomen with contrast angiography was done. It revealed a dilated proximal jejunum with dirty surrounding mesenteric fat and few enlarged lymph nodes

(the largest was 15 mm in diameter) suggestive of an inflammatory process. No masses were noted. Regarding the angiography scan, a totally thrombosed superior mesenteric vein was noted with patent portal and splenic veins (Figure 2) and a normal arterial tree of the abdomen.



Figure 2. CT scan of the abdomen with contrast angiography showing a totally thrombosed superior mesenteric vein

During laparotomy a tight stricture was identified 20 cm distal to the duodenojejunal with dilated proximal loop and nearly separated distal loop. Resection-anastomosis was done. The patient passed an uneventful postoperative course and was discharged on the 7th postoperative day. Follow up visits revealed an unremarkable state of health with no postoperative complications or recurrence of symptoms.

Pathological examination of the resected specimen suggested mesenteric non-specific chronic inflammation involving the serosa of the jejunum with focal sloughing of the mucosa and submucosal edema, which are signs of chronic intestinal ischemia that may be attributed to mesenteric vein occlusion.

3. Discussion

The incidence of superior mesenteric vein thrombosis (SMVT) is estimated to be 2.7 per 100,000 persons. Isolated MVT which is not accompanied by extrahepatic portal vein thrombosis and/or splenic vein thrombosis is rare [4]. The SMVT may be due to: thrombosis occurring at the origin, in one of the distal tributaries or from propagating portal vein thrombosis that might extend to mesenteric vessels. This thrombus causes impairment of the venous drainage of the intestinal wall, this in turn leads to congestion that eventually progresses to intramural hemorrhage. Although it is frequently observed in cirrhotic patients, especially those who suffers from portal hypertension, mesenteric vein thrombosis may be primary as well [6].

A SMVT can be presented through an acute, sub-acute or a chronic course. Most patients suffering from chronic ischemia are accidentally diagnosed by imaging studies performed for other conditions. These patients may undergo an asymptomatic course during the initial

thrombotic event; hence, the exact date of this event is usually undetermined [7]. Asymptomatic presentation of chronic ischemia without acute abdominal pain due to the presence of sufficient venous collateral circulation is common [8]. Although these collaterals are capable of preventing hemorrhagic infarction, it is not adequate to prevent segmental chronic intestinal ischemia that in turn leads to chronic inflammation and scarring of the small intestine musculature [1]. The end result of this process is the development of a small intestine ischemic stricture. Intestinal obstruction may occur as the progress of a normal wave of peristalsis is impeded, obstruction may follow [5].

In our case, the patient underwent a silent course of SMVT that eventually led to chronic intestinal ischemia. Chronic intestinal ischemia was first presented by its complication which is the small intestinal stricture. The long period between the onset of the complaint and the definitive diagnosis, as well as the severity of the condition suggest the difficulty of the diagnosis of such a rare complication of an already rare condition (i. e. SMVT). Although the diagnosis of the cause of the small intestinal obstruction did not affect the line of treatment selection as surgery was the optimal option, the diagnosis of the SMVT as the underlying etiology drew the attention to the importance of the follow up. As the condition may recur as long as the SMVT persists.

4. Conclusion

A high suspicion level should be maintained during dealing with the cases of intestinal obstruction due to small intestine stricture as mesenteric ischemia could be the underlying cause.

Statement of Competing Interests

Both Mina Azer and Ayman El Nakeeb have no Competing Interests.

List of Abbreviations

MVT:	Mesenteric vein thrombosis
SMVT:	Superior mesenteric vein thrombosis

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